

What is claimed is:

1. A glass composition comprising the following glass ingredients:
 - 45 to 75 % by weight of SiO₂;
 - 1 to 20 % by weight of Al₂O₃;
 - 0 to 8 % by weight, zero inclusive, of B₂O₃;
 - SiO₂ + Al₂O₃ + B₂O₃ accounting for 60 to 90 % by weight;
 - a total of 0 to 20 % by weight, zero inclusive, of R₂O compounds, where R = Li, Na, and K; and
 - a total of 0 to 15 % by weight, zero inclusive, of TiO₂ + ZrO₂ + Ln_xO_y, where Ln_xO_y represents at least one compound selected from the group consisting of lanthanoid metal oxides, Y₂O₃, Nb₂O₅, and Ta₂O₅.
2. A glass composition as claimed in claim 1, further comprising the following glass ingredients:
 - a total of 12 % or less by weight of one or two or more R'O compounds, where R' = Mg, Ca, Sr, Ba, and Zn.
3. A glass substrate formed of a glass composition comprising the following glass ingredients:
 - 45 to 75 % by weight of SiO₂;
 - 1 to 20 % by weight of Al₂O₃;
 - 0 to 8 % by weight, zero inclusive, of B₂O₃;
 - SiO₂ + Al₂O₃ + B₂O₃ accounting for 60 to 90 % by weight;
 - a total of 0 to 20 % by weight, zero inclusive, of R₂O compounds, where R = Li, Na,

and K; and

a total of 0 to 15 % by weight, zero inclusive, of $TiO_2 + ZrO_2 + Ln_xO_y$, where Ln_xO_y represents at least one compound selected from the group consisting of lanthanoid metal oxides, Y_2O_3 , Nb_2O_5 , and Ta_2O_5 .

4. A glass substrate as claimed in claim 3, further comprising the following glass ingredients:

a total of 12 % or less by weight of one or two or more $R'O$ compounds, where $R' = Mg, Ca, Sr, Ba, \text{ and } Zn$.

5. A glass substrate as claimed in claim 3, wherein the glass substrate is not subjected to strengthening.

6. A glass substrate as claimed in claim 3, wherein the glass substrate is a substrate for a magnetic disk.

7. A glass substrate as claimed in claim 3, wherein the glass substrate has a fracture toughness K_c of $0.90 \text{ MPa} / m^{1/2}$ or greater.

8. A glass substrate as claimed in claim 3, wherein the glass substrate has SiO_2 elution A in a range of from 10 to 450 ppb per 2.5-inch disk.

9. A glass substrate as claimed in claim 3, wherein the glass substrate has a fracture toughness K_c of $0.90 \text{ MPa} / m^{1/2}$ or greater, and has SiO_2 elution A in a range of from

10 to 450 ppb per 2.5-inch disk, with a ratio of the SiO₂ elution A to the fracture toughness K_c in a range of from 3 to 500.

10. A glass substrate as claimed in claim 3, wherein the glass substrate has alkali elution B of 350 ppb or lower per 2.5-inch disk.

11. A glass substrate as claimed in claim 3, wherein the glass substrate is not subjected to strengthening, and has a specific elastic modulus E / ρ of 30 or higher.

12. A glass substrate as claimed in claim 3, wherein the glass substrate is not subjected to strengthening, and has a Vickers hardness Hv in a range of from 500 to 700.

13. A glass substrate as claimed in claim 3, wherein the glass substrate is not subjected to strengthening, and has a linear thermal expansion coefficient α in a range of from 40×10^{-7} / °C to 90×10^{-7} / °C.

14. A glass substrate as claimed in claim 3, wherein the glass substrate exhibits a weight reduction factor lower than 8.0 % when kept in a melted state at 1 500 °C for 24 hours.

15. A glass substrate as claimed in claim 3, wherein the glass substrate has a glass transition temperature T_g of 600 °C or lower.

16. A glass substrate as claimed in claim 3, wherein the glass substrate has a liquid phase temperature T_L of 1 300 °C or lower.

17. A glass substrate as claimed in claim 3, wherein a temperature $T_{\log \eta = 2}$ at which the glass substrate has a melt viscosity of $\log \eta = 2$ is 1 550 °C or lower.

18. A magnetic disk substrate comprising a glass substrate as claimed in claim 3 and a magnetic film formed on at least one surface thereof.

19. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate further comprises the following glass ingredients:

a total of 12 % or less by weight of one or two or more R'O compounds, where R' = Mg, Ca, Sr, Ba, and Zn.

20. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate is not subjected to strengthening.

21. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate has a fracture toughness K_c of $0.90 \text{ MPa} / \text{m}^{1/2}$ or greater.

22. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate has SiO_2 elution A in a range of from 10 to 450 ppb per 2.5-inch disk.

23. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate has a fracture toughness K_c of $0.90 \text{ MPa} / \text{m}^{1/2}$ or greater, and has SiO_2 elution A in a range of from 10 to 450 ppb per 2.5-inch disk, with a ratio of the SiO_2 elution A to the fracture

toughness K_c in a range of from 3 to 500.

24. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate has alkali elution B of 350 ppb or lower per 2.5-inch disk.

25. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate is not subjected to strengthening, and has a specific elastic modulus E / ρ of 30 or higher.

26. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate is not subjected to strengthening, and has a Vickers hardness H_v in a range of from 500 to 700.

27. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate is not subjected to strengthening, and has a linear thermal expansion coefficient α in a range of from $40 \times 10^{-7} / ^\circ C$ to $90 \times 10^{-7} / ^\circ C$.

28. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate exhibits a weight reduction factor lower than 8.0 % when kept in a melted state at 1 500 °C for 24 hours.

29. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate has a glass transition temperature T_g of 600 °C or lower.

30. A magnetic disk substrate as claimed in claim 18, wherein the glass substrate has a liquid phase temperature T_L of 1 300 °C or lower.

31. A magnetic disk substrate as claimed in claim 18, wherein a temperature $T_{\log \eta}$
 $= 2$ at which the glass substrate has a melt viscosity of $\log \eta = 2$ is 1 550 °C or lower.